Patent Claims:

1. Method of steering a vehicle with a superimposed steering system, wherein a steering angle input by the driver and an additional angle (additional steering angle) is determined and wherein the additional steering angle can override the input steering angle according to further quantities, in particular diving-dynamics quantities, by means of an electric motor,
c h a r a c t e r i z e d in that the method includes a steering angle control with a subordinated current or torque control of the electric motor.

2. Method as claimed in claim 1,
c h a r a c t e r i z e d in that an actual steering angle value and a nominal steering angle value is determined and, according to a comparison between the actual steering angle value and the nominal steering angle value, a nominal current or a nominal motor torque is produced by which the electric motor introduces the additional steering angle into the steering system.

3. Method as claimed in claim 1 or 2,
c h a r a c t e r i z e d in that a steering request of the driver δ_{DRV} 52 is determined on the basis of a steering wheel angle δ_H 50 adjusted by the driver, wherein the driver's steering request δ_{DRV} 52 is composed of the adjusted steering wheel angle δ_H 50 and an invariably or variable predeterminable gear ratio factor and the gear ratio factor is chosen corresponding to the current driving situation, in particular a detected longitudinal

vehicle speed and/or a steering wheel turning angle, and in that a nominal steering angle value 53 $\delta_{nominal}$ is determined on the basis of the so calculated steering request of the driver and sent to the steering control.

4. Method as claimed in any one of claims 1 to 3, c h a r a c t e r i z e d in that the driver's steering angle δ_H is determined and, in connection with a gear ratio factor i_{L1} by which the driver's steering angle acts directly on the steering gear, an additional steering angle δ_M is additively superimposed thereon in connection with a second gear ratio i_{L2}, and in that a superimposed steering angle δ_L is determined and sent as an actual value $\delta_{L,actual}$ to the steering control, with said superimposed steering angle δ_L being determined according to the following formula:

$$\delta_L = i_{L1}*\delta_H + i_{L2}*\delta_M.$$

5. Method as claimed in any one of claims 1 to 4, c h a r a c t e r i z e d in that a driving dynamics control (ESP system) cooperates with the steering control, and in that an additional steering angle $\Delta\delta$ 56 responsive to driving dynamics is determined when the necessity of a stabilizing intervention is detected by driving dynamics control.

6. Method as claimed in claim 5, c h a r a c t e r i z e d in that the additional steering angle $\Delta\delta$ 56 responsive to driving dynamics that is produced on the basis of a correcting intervention of a

driving dynamics controller 57 is additively superimposed on the driver's steering request δ_{DRV} 52.

7. Method as claimed in any one of claims 1 to 6, characterized in that the electric motor is additionally actuated by means of a field weakening current according to further quantities, with a view to increasing the motor speed without reduction of the available motor torque.

8. Method as claimed in claim 7, characterized in that the electric motor is additionally actuated by means of a field weakening current when a very direct steering ratio and/or a high nominal speed is desired or required.

9. Method as claimed in any one of claims 1 to 8, characterized in that based on the series steering ratio $i_{L,series}$ and due to a boosting factor K1 responsive to a steering wheel angle and a boosting factor K2 responsive to the vehicle speed, a resulting steering ratio $I_{L,ESAS}$ which corresponds to the ratio between the steered wheels δ_V and the driver's steering angle δ_H is determined according to the following formula:

$$i_{L,ESAS} = \delta_V/\delta_H = i_{L,series} /(K1*K2).$$

10. Method as claimed in any one of claims 1 to 9, characterized in that an anticipatory control of the nominal speed of the motor $\omega_{M,nominal}$ is executed, which is determined from a motor speed specification $\omega_{M,spec}$ and a motor speed preset value $\omega_{M,reg}$,

and the motor speed preset value $\omega_{M,reg}$ is determined on the basis of a comparison between a nominal steering angle value $\delta_{L,nominal}$ and a determined actual steering angle value $\delta_{L,actual}$, and the motor speed specification $\omega_{M,spec}$ is determined from the time derivative of the nominal steering angle value $\delta_{L,nominal}$ and the driver's steering angle δ_H and a gear ratio factor i_{L2} by means of the following formula:

$$\dot{\omega}_{M,spec} = (\dot{\delta}_{L,nominal} - i_{L1}\dot{\delta}_H) / i_{L2}.$$

11. Computer program,
c h a r a c t e r i z e d in that it is suitable for implementing a method as claimed in any one of the preceding claims.

12. Steering system for a vehicle, comprising a steering wheel arranged at a steering column, a steering gear, a steering angle sensor arranged at the steering column, an overriding motor that acts on the steering column by way of an overriding gear, an electric steering actuator, a sensor for measuring the position of the steering wheels, and a steering control device,
c h a r a c t e r i z e d in that the steering control device includes a means for implementing the method as claimed in any one of the preceding claims.